

# Work Order ID 88950

Saturday, August 11, 2012 12:41:08 PM

\*88950\*

Page 1

Item ID: D350-591-122 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Heli-Access-Step, RH  
 Start Date: 8/13/2012 Start Qty: 4.00 \*4\* Cust Item ID:  
 Required Date: 8/24/2012 Req'd Qty: 4.00 \*4\* Customer:  
 Reference:

Approvals: Process Plan: MLJ Date: 12/08/13 Tooling: Date: Run Start \*NR1\*  
 QC: Date: SPC (Y/N): Date: Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr								
D2351	E								

100  
 \*100\*  
 DC  
 Document Control

DOCUMENT CONTROL

Memo  
 Photocopy bluefile and type labels as per PPP D350-591-122 CHG005

4 12/11/12

110  
 \*110\*  
 Large Fab  
 Large Fab

Large Fab

Memo  
 1-Cut D2244-116 extrusion to 55.32" long as per Dwg D2351 using cutting table setup DT8185-G  
 2-Drill extrusion per Dwg D2351 using Jig DT8230 for rivets.

4 12/10/23

130  
 \*130\*  
 CNC Bend 1  
 CNC Delta 100 Bender

BENDING MACHINE - SKIDTUBES

Memo  
 Bend as per dwg D2351-042 using cnc bender and Folio FT 012. Use bend prog. D2351-042.

12/10/29

2000

# Work Order ID 88950

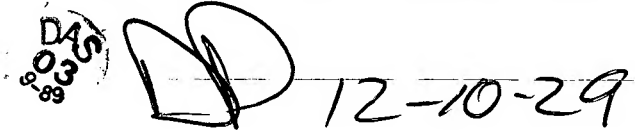



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Item ID: D350-591-122 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Heli-Access-Step, RH  
Start Date: 8/13/2012 Start Qty: 4.00 **\*4\*** Cust Item ID:  
Required Date: 8/24/2012 Req'd Qty: 4.00 **\*4\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 <b>*140*</b> QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00							
150 <b>*150*</b> Large Fab Large Fab	Large Fab  Memo 1-Bevel Fwd and Aft end for welding 2-Weld Aft End Bracket per QSI 004 & Dwg D2351 using Welding Jig DT8033 A/RAluminum Rod <u>122431</u> 3-Do not Grind Flush	0.00  0.00							
160 <b>*160*</b> QC Quality Control	QC9- Inspect visual per QSI004- Fusion Welds  Memo	0.00  0.00							 

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Item ID: D350-591-122

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Heli-Access-Step, RH

Stop **\*NS2\***

Start Date: 8/13/2012 Start Qty: 4.00 **\*4\***

Cust Item ID:

Required Date: 8/24/2012 Req'd Qty: 4.00 **\*4\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

170

QC5- Inspect part completeness to step on W/O

0.00

**\*170\***

QC

Memo

0.00

Quality Control

DAS  
15  
9-89

12.0.31

4

180

Chemical Conversion Coat per QSI005 4.1

0.00

**\*180\***

HandFinish

Memo

0.00

Hand Finishing

4

26

12-10-1

190

QC Inspect Part Finish

0.00

**\*190\***

QC

Memo

0.00

Quality Control

4x

12/11/01

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Item ID: D350-591-122

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Heli-Access-Step, RH

Stop

**\*NS2\***

Start Date: 8/13/2012 Start Qty: 4.00

**\*4\***

Cust Item ID:

Required Date: 8/24/2012 Req'd Qty: 4.00

**\*4\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

220

**\*220\***

Large Fab

Large Fab

0.00

Memo

0.00

Large Fab

1-Rivet Leg Assembly as per Dwg D2351

2-Weld Fwd End Plate per QSI 004 & Dwg D2351

A/RAluminum Rod 122358

3-Grind end plate flush.

4

φ

Ac 12-11-01  
Ac 12-11-01  
Ac 12-11-02

225

**\*225\***

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

(4) 12-11-2



230

**\*230\***

QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

(4) 12-11-2



# Work Order ID 88950

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Item ID: D350-591-122

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**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Heli-Access-Step, RH

Stop **\*NS2\***

Start Date: 8/13/2012 Start Qty: 4.00 **\*4\***

Cust Item ID:

Required Date: 8/24/2012 Req'd Qty: 4.00 **\*4\***

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:  
QC: Date: SPC (Y/N): Date:

Run Start **\*NR1\***  
Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	Chemical Conversion Coat per QSI005 4.1	0.00							
<b>*250*</b>									
HandFinish	Memo	0.00							
Hand Finishing									
260	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
<b>*260*</b>									
Powdercoat	Memo	0.00							
Powder Coating									
	START TIME: 11-15 OVEN TEMPERATURE:								
	FINISH TIME: 11-45								
270	Wing Walk as per dwg QSI005 4.4 Batch 122589	0.00							
<b>*270*</b>									
HandFinish	Memo	0.00							
Hand Finishing									

m122878

4X ~~Ø~~ 12/11/05  
4X ~~Ø~~ 12/11/05  
H ~~Ø~~ 12-11-5.

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Item ID: D350-591-122

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Heli-Access-Step, RH

Start Date: 8/13/2012 Start Qty: 4.00

**\*4\***

Cust Item ID:

Required Date: 8/24/2012 Req'd Qty: 4.00

**\*4\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursTool ID Tool # Plan  
Code Accept Reject Reject Insp.  
Qty Qty Number Stamp

280

QC3- Inspect Part Finish

0.00

**\*280\***

QC

Memo

0.00

Quality Control

290

Pick Kit

0.00

**\*290\***

Packaging

Memo

0.00

Packaging

300

QC4- 100% Inspect kits for completeness

0.00

**\*300\***

QC

Memo

0.00

Quality Control

DAS  
15  
8-83

12.11.05

DAS  
15  
8-83

12.11.06

4

4

4

12/11/06 J.D.  
[Signature]

# Work Order ID 88950

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Item ID: D350-591-122

Accept

**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Item Name: Heli-Access-Step, RH

Stop

**\*NS2\***

Start Date: 8/13/2012 Start Qty: 4.00

**\*4\***

Cust Item ID:

Required Date: 8/24/2012 Req'd Qty: 4.00

**\*4\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

**\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop

**\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

310

0.00

**\*310\***

Packaging

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D350-591-122 Location: 60 PPP Rev:

(4.0)

12/11/12

320

QC21- Final Inspection - Work Order Release

0.00

**\*320\***

QC

Memo

0.00

Quality Control

12/11/12

MCS 12-11-07



# Picklist Print

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Page 1

Work Order ID: 88950

Parent Item: D350-591-122

Parent Item Name: Heli-Access-Step, RH

Start Date: 8/13/2012

Required Date: 8/24/2012

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:E02.10.21Re-format; Incorporated D2351-041 IPPKJ/RF

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2582 Step Leg Assembly		Manufactured	No				Each	2.0000					
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				WA014		2							
				72828		2							
MS20600-AD4W3 Cherry Rivets		Purchased	No				Each	1,470.0000					
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				311		582							
				122452		582							
				ST314		284							
				122151		284							
				ST321		471							
				111636		36							
				117601		3							
				118626		200							
				120308		232							
				WA018		133							
				107939		133							
D2244-116 Step Extrusion		Manufactured	No			110	Each	56.5000	0.5	2			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				WA		56.5							
				60307		2							
				80803		54.5							
D2850-2 End Cap		Manufactured	No			150	Each	7.0000	1	4			
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				WA016		7							
				68489		7							

4 B86749 (x4)  
Ac 12.11.01

64 Ac 12.11.01

(64)

Ac 12.10.23

2

Ac 12.10.29

4

# Picklist Print

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Work Order ID: 88950

Parent Item: D350-591-122

Parent Item Name: Heli-Access-Step, RH

Start Date: 8/13/2012

Required Date: 8/24/2012

Start Qty: 4.00

Required Qty: 4.00

D2673-34 Manufactured No 220 Each 43.0000 1 4 8/12.11.01

End Plate

Location Loc Qty Loc Code

WA 43

84535 43

AN3-37A

Purchased No

290 Each 417.0000

Bolt

Location Loc Qty Loc Code

ST353 417

117619 4

119086 413

AN4-13A

Purchased No

290 Each 1,123.0000

Bolt

Location Loc Qty Loc Code

ST356 500

122416 500

ST357 623

120187 19

120770 12

121652 588

122063 4

AN960JD10

Washer

NAS1149D0363J

Purchased No

290 Each 0.0000

AN960JD416

Washer

NAS1149D0463J

Purchased No

290 Each 29.0000

Location Loc Qty Loc Code

ST351 29

116289 8

119097 21

# Picklist Print

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Work Order ID: 88950

Parent Item: D350-591-122

Parent Item Name: Heli-Access-Step, RH

Start Date: 8/13/2012

Required Date: 8/24/2012

Start Qty: 4.00

Required Qty: 4.00

<div>D2230-1</div> <div>Log</div> <div>SMB 4X</div>	Manufactured	No	290	Each	186.0000	<div>1</div> <div>89415</div> <div>4</div> <div>✓</div> <div>20</div> <div>82</div>
	<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>	
	ST480		186			
	84136		186			
<div>D2230-3</div> <div>Log</div> <div>SMB 4X</div>	Manufactured	No	290	Each	184.0000	<div>1</div> <div>90514</div> <div>4</div> <div>✓</div> <div>20</div> <div>82</div>
	<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>	
	ST472		184			
	84134		184			
<div>D2856-400</div> <div>Abrasion Strip</div> <div>cut (1) at 7.20"</div> <div>SMB 4X</div>	Manufactured	No	290	f	202.4425	<div>0.6</div> <div>2.4</div> <div>✓</div> <div>20</div> <div>82</div>
	<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>	
	ST403		96.998			
	81875		96.998			
	ST409		105.4445			
	63735		0.6696			
	68076		0.3149			
	71164		8.46			
<div>MS21042L3</div> <div>Nut</div> <div>SMB 4X</div>	Purchased	No	290	Each	3,345.0000	<div>2</div> <div>86905</div> <div>8</div> <div>✓</div> <div>25</div> <div>12/11/06</div> <div>82</div>
	<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>	
	316		831			
	122452		831			
	ST300		771			
	117885		32			
	119017		601			
	119075		138			
	ST317		1743			
	122141		1743			

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Shop Packet Print

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# Picklist Print

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Work Order ID: 88950

Parent Item: D350-591-122

Parent Item Name: Heli-Access-Step, RH

Start Date: 8/13/2012

Required Date: 8/24/2012

Start Qty: 4.00

Required Qty: 4.00

**MS2104214**  
Nut

Purchased No

290 Each 5,460.0000

**8** 123021<sup>12</sup> ✓ JB

SND 4X

Location	Loc Qty	Loc Code
314	5000	
122452	5000	
ST300	460	
104248	1	
116823	4	
119075	116	
121011	193	
121444	146	

**D2732-030**  
Rubber Cushion  
cut (2) at 3.00"

Manufactured No

290 Each 42.0000

**2** 83560<sup>8</sup> ✓ JB

Sms 4X

Location	Loc Qty	Loc Code
ST402	2	
84498	2	
ST415	40	
88776	40	

**AN4-16A**  
Bolt

Purchased No

290 Each 127.0000

**2** 123352<sup>8</sup> ✓ JB 12/11/06

Sms 4X

Location	Loc Qty	Loc Code
ST357	63	
122416	63	
ST358	64	
120498	14	
121541	50	

**DART**

DESIGN KE	DRAWN BY PH	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D2351	REV. E SHEET 1 OF 2
DATE 05.11.14		TITLE HIGH FLOAT STEP ASSEMBLY	SCALE NTS
A	95.02.15	NEW ISSUE	
B	97.05.22	END CAPS CHANGED	
C	97.07.23	ADDED BUSHING AND FACING INFO	
D	98.12.17	CHANGED TO BEND, D2850 REPLACES D2357 & D2358, INCORP. DEO 9084	
E	05.11.14	UPDATE FINISHING NOTE	

**D2351 HIGH FLOAT STEP ASSEMBLY PARTS LIST**

Part No.	Description	QTY -041	QTY -042
D2351-041	High Float Step Assembly (LH)	X	
D2351-042	High Float Step Assembly (RH)		X
D2244-55.4	STEP EXTRUSION*	1	1
D2582	STEP LEG ASSEMBLY	1	1
D2673-34	STEP END PLATE	1	1
D2850-1	END BRACKET	1	
D2850-2	END BRACKET		1
MS20600AD4W3	RIVETS	16	16

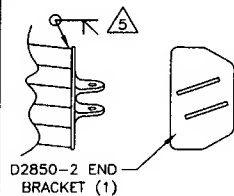
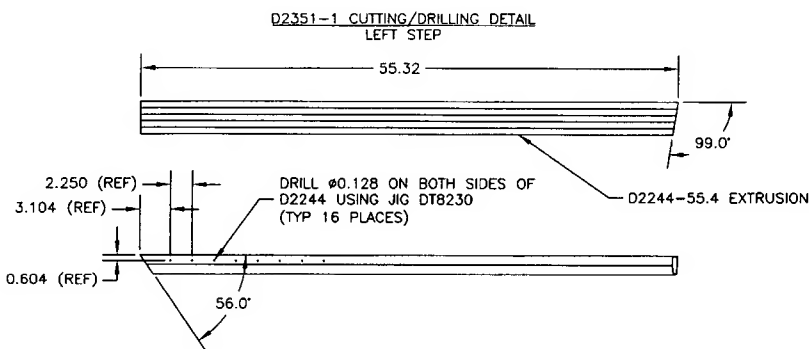
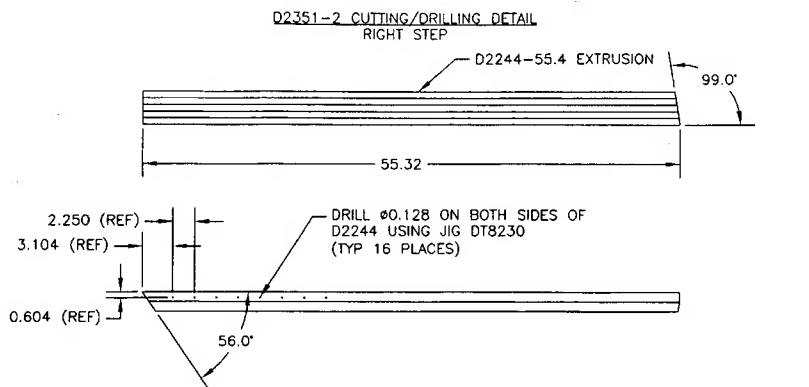
\*cut per drawing

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 88950 MCT  
12/08/13

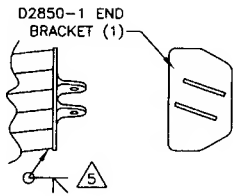
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05.11.28PH  
ECN 1105**UNDER REVIEW**07.11.21  
PDR NICK 263

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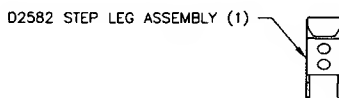
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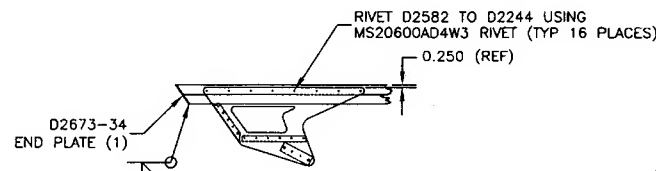
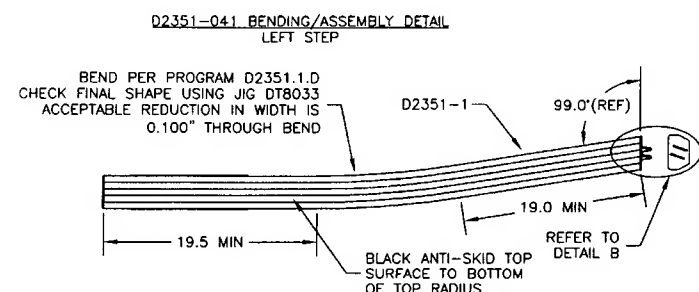
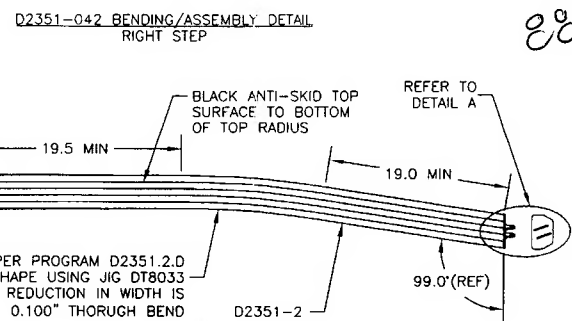
DETAIL A  
SCALE: 1:4



DETAIL B  
SCALE: 1:4



- GENERAL NOTES
- 1) WELD PER DART QSI 004
  - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT GLOSS WHITE (4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
  - 3) ALL DIMENSIONS ARE IN INCHES
  - 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5 CHAMFER D2244 EXTRUSION 0.075"x45° BEFORE WELDING D2850-1 OR D2850-2 IN PLACE. DO NOT GRIND FLUSH.



RELEASED  
05.11.28

UNDER REVIEW  
05.11.28

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		CHECKED	APPROVED	DRAWING NO.	REV. E
		DATE		D2351	SHEET 2 OF 2
				TITLE	SCALE
		05.11.14		HIGH FLOAT STEP ASSEMBLY	1:12

